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Kazushi Sato

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EXAMINER

CZEKAJ, DAVID J

ART UNIT

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2621

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DELIVERY MODE

09/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/819,190	Applicant(s) SATO ET AL.	
	Examiner DAVID CZEKAJ	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-19,21-24 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-19,21-24 and 26-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the rejection(s) of the claim(s) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as set forth below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 5-12, 16-19, and 28, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (6104753), (hereinafter referred to as "Kim") in view of Demos (6728317) in further view of Kimura et al. (5694173) in further view of Jones et al. (5689698), (hereinafter referred to as "Jones").

Regarding claims 1, 11, and 28, Kim discloses an apparatus that relates to a HDTV video decoder (Kim: column 1, lines 7-10). This apparatus comprises "decoding I and P pictures by processing the interlaced scanning formatted pictures on a macroblock bases using four of eight DCT coefficients in the horizontal and vertical directions" (Kim: figure 3, column 8, lines 15-20), "discarding a field from the interlaced scanning formatted decoded pictures to generate progressive scanning pictures" (Kim: column 8, lines 40-45, wherein

the field discarding is removing the data on even line positions) and “decimating the progressive picture in the horizontal direction by performing $\frac{1}{2}$ downsampling” (Kim: column 6, lines 64-66). However, this apparatus lacks the decision and encoding means and the coefficients being low range coefficients as claimed. Demos teaches that it would be desirable to provide enhancements to resolution and image clarity (Demos: column 2, lines 7-10). To help provide this, Demos discloses an apparatus comprising “determining picture types that includes I, P, and B pictures and discarding B pictures from the input information” (Demos: column 19, lines 4-8), “selecting fields to convert a picture having $\frac{1}{2}$ resolution to a picture having $\frac{1}{2}$ in the horizontal direction and a resolution of $\frac{1}{4}$ in the vertical direction” (Demos: column 34, lines 30-55) and “encoding the decimated pictures according to the MPEG-4 standard to generate the output having a resolution of $\frac{1}{4} \times \frac{1}{4}$ of the input” (Demos: column 34, lines 30-35). Kimura teaches that prior art encoding systems cannot select the special display or the normal display of a part or entirety of a picture (Kimura: column 8, lines 64-67). To help alleviate this problem, Kimura discloses “low range coefficients” (Kimura: column 17, lines 54-67, wherein only the low range coefficients are used). Jones teaches that UDF’s allow the conversion of MPEG-2 to MPEG-4 (Jones: column 10, lines 35-44). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Kim, add the enhancement techniques taught by Demos, add the low-range coefficients taught by Kimura, and add the conversion taught

by Jones in order to obtain an apparatus that provides the best picture quality possible.

Regarding claim 12, Kim discloses “the decimating means performs $\frac{1}{2}$ downsampling in horizontal direction and output has resolution of $\frac{1}{4}$ for both the horizontal and vertical directions” (Kim: column 6, lines 64-66).

Regarding claim 5, note the examiners rejection for claim 1.

Regarding claim 6, Kim discloses “a variable length decoder and IDCT” (Kim: figure 2).

Regarding claim 7, Kim discloses “the IDCT means is associated with the field mode and applies IDCT to DCT coefficients of four horizontal and vertical coefficients of eight horizontal and vertical DCT coefficients” (Kim: figure 9, item 31).

Regarding claims 8-10, although not disclosed, it would have been obvious to apply field separation to the DCT coefficients (Official Notice). Doing so would have been obvious in order to process the correct video data.

Regarding claim 16, Kim discloses “the filter is a half-band filter” (Kim: figure 9).

Regarding claim 17, Kim discloses “the filter calculates coefficients equivalent to a series of interpolation operations to apply the coefficients direction to pixel values depending on values of the motion vector” (Kim: figure 9, figure 30, column 17, lines 15-35).

Regarding claims 18-19, Kim discloses “the motion compensation means virtually creates pixels as necessary outside the picture frame by way of a filtering processing operation” (Kim: column 10, lines 15-25, wherein the half pixel or pel is the result of the virtual pixels).

2. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (6104753), (hereinafter referred to as “Kim”) in view of Demos (6728317) in further view of Kimura et al. (5694173) in further view of Jones et al. (5689698), (hereinafter referred to as “Jones”) in further of Staver et al. (5463569), (hereinafter referred to as “Staver”).

Regarding claims 13-15, note the examiners rejection for claim 1, and in addition, claims 13-15 differ from claim 1 in that claims 13-15 further require a double interpolation filter. Staver teaches that a sharper cutoff in frequency may be achieved by using a double interpolation filter (Staver: column 6, lines 21-24). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the double interpolation filter taught by Staver in order to obtain an apparatus that can easily achieve a sharp cutoff in frequency.

3. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (6104753), (hereinafter referred to as “Kim”) in view of Demos (6728317) in further view of Kimura et al. (5694173) in further view of Jones et al. (5689698), (hereinafter referred to as “Jones”) in further view of Katayama et al. (5621826), (hereinafter referred to as “Katayama”).

Regarding claims 21-24, note the examiners rejection for claim 1, and in addition, claims 21-24 differ from claim 1 in that claims 21-24 further require converting to a picture containing $\frac{1}{4}$ resolution in both directions. Katayama teaches that data reduction using conventional methods results in the loss of information (Katayama: column 2, lines 28-30). To help alleviate this problem, Katayama discloses “converting an interlaced picture having $\frac{1}{2}$ resolution in both directions to a picture having a resolution of $\frac{1}{2}$ horizontal $\frac{1}{4}$ vertical and then to $\frac{1}{4}$ for both directions” (Katayama: figures 2 and 11, wherein the converting is the two stage process. After the first iteration, the picture has a resolution of $\frac{1}{2}$ horizontal $\frac{1}{4}$ vertical. After the second iteration/pass the picture has $\frac{1}{4}$ resolution in both directions. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the data reduction method taught by Katayama in order to prevent the loss of data.

4. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (6104753), (hereinafter referred to as “Kim”) in view of Demos (6728317) in further view of Kimura et al. (5694173) in further view of Jones et al. (5689698), (hereinafter referred to as “Jones”) in further view of Kondo (5835138).

Regarding claims 26-27, note the examiners rejection for claim 1, and in addition, claims 26-27 differ from claim 1 in that claims 26-27 further require a synthesized motion vector. Kondo teaches that the motion vector due to the camera shake cannot be correctly detected (Kondo: column 2, lines 15-20). To help alleviate this problem Kondo discloses “synthesizing the motion vector”

(Kondo: column 10, lines 16-23). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the synthesized motion vector taught by Kondo in order to obtain an apparatus that can correctly identify motion vectors and correct camera shaking from blurring the image.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID CZEKAJ whose telephone number is (571)272-7327. The examiner can normally be reached on Mon-Thurs and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Dave Czekaj/
Primary Examiner, Art Unit 2621